

CLAIMS

Sub 1

1. A method of producing flat-blade windshield wipers for motor vehicles with curved flat blades, the method comprising the steps of:

feeding a spring band formed of a plurality of flat blades arranged one next to another in a direction of elongation of said spring band through feed rolls and guide rolls;

bending said spring band in one transversal direction between three support sites spaced from each other in a direction of feeding of said spring band and resting successively in an alternating manner on one of two sides of said spring band;

re-bending said spring band in another transversal direction opposite to said one transversal direction in a fourth support site arranged subsequently to said three support sites by a degree of re-bending lower than a bending degree in said bending step;

separating each individual flat blade of a re-bent spring band from a remaining spring band;

combining each individual flat blade with a rubber-elastic wiping bar; and mounting to said re-bent flat blade combined with said wiping bar a connection device for a wiper arm.

2. The method according to claim 1, further comprising the step of adjusting the degree of bending of said spring band in said three support sites by

the degree of re-bending greater in said fourth support site than a required final bending radius of the flat blade.

3. The method according to claim 1, comprising the step of determining the degree of re-bending empirically.

4. The method according to claim 1, comprising the step of selecting the degree of re-bending at 10 to 20% of the bending degree.

5. The method according to claim 1, wherein in said bending step, a central support site of said three support sites and, in said re-bending step, said fourth support site are each displaceable transversely to said spring band in a direction of a width of said spring band and wherein transverse displacements of said central support site and said fourth support site are controlled according to preset programs which take into account changes in the material thickness in said flat blades.

6. The method according to claim 1, wherein a last one of said three support sites for bending the spring band in said bending step is designed as a cutting edge, said separating step including passing a cutter along said cutting edge.

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7. The method according to claim 5, wherein remaining support sites are formed by a circumference of one of a roll or a roller.

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8. The method according to claim 5, comprising the step of marking of said flat blades successively arranged in said spring band by trigger holes used for controlling a start and an end of programs in said bending step and said re-bending step and for triggering said separating step.

9. The method according to claim 1, comprising the step of optically measuring and comparing said flat blades with specified nominal values and using mean deviations from said nominal values for correcting programs in said bending step and said re-bending step.

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10. The method according to claim 1, wherein said bending step and said re-bending step are carried out at the same time as said feeding step and said feeding step is briefly interrupted in said separating step.

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11. The method according to claim 1, comprising the step of heat-treating a surface of said flat blades.

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